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# Assistive Technology: creating and engaging collaborative communities

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## Abstract

<sup>1</sup>This paper outlines the remit of the UK Engineering and Physical Sciences Research Council KT-EQUAL (Knowledge Transfer for Extending Quality of Life for older and disabled people) programme.

Case examples drawing on the range of activities undertaken by KT-EQUAL highlight where assistive technology developments have been facilitated, the value of network activities and an underpinning model of engagement and collaboration.

Given an increasing emphasis on the impact of research the model and innovative approaches deployed by KT-EQUAL are even more crucial in future developments which aim to ensure that research can be used to benefit society.

**Keywords** Knowledge transfer. Knowledge exchange. Older people. Assistive Technology. KT-EQUAL. Engagement. Collaboration.

## 1. Introduction

### 1.1. Remit of KT-EQUAL

KT-EQUAL was a national research programme created in January 2009 and funded until July 2013 by the UK's Engineering and Physical Sciences Research Council (EPSRC). The aim of the programme was to draw upon a decade of research into ageing funded through the extending quality of life (EQUAL) programme and other associated funding and to push the knowledge out from this research into practice, into policy and into industry to benefit the lives of older and disabled people. It built upon the model and good practice demonstrated by the UK's Strategic Promotion of Ageing Research Capacity (SPARC) programme which ran from 2005 - 2008 and was jointly funded by the EPSRC and the Biotechnology and Biological Sciences Research Council (BBSRC) [1].

Within a context of an ageing population, a key driver for the KT-EQUAL programme was to make sure that evidence and knowledge could inform solutions to benefit the lives of older people.

Seeking out solutions, improving quality of life and wellbeing, requires multidisciplinary research teams and engagement with the many organisations and agencies which work with older and disabled people. In addition, KT-EQUAL actively sought the views and involvement of older and disabled people and their advocates as an integral aspect of developing solutions to improve quality of life.

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The KT-EQUAL programme involved a collaboration across seven UK universities: Bath, Cambridge, Edinburgh, Loughborough, Reading, Salford and Sheffield.

### ***1.2. Policy agenda of research impact and knowledge exchange***

Finding ways of making use of research knowledge and evidence is a growing and evolving area. There continues to be a pressing need to ensure research can be put to effective use [2-6]. For example, research applications to the Research Councils UK (RCUK) are asked to articulate a clear pathways to impact statement as part of new proposals [7].

KT-EQUAL had begun pioneering innovative ways of ensuring research findings could be used for wider benefit before impact was formally introduced as part of quality assessment of research through the Research Excellence Framework 2014 (REF2014) exercise. In this case, impact is defined as ‘an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia’ [8].

Challenges in using research to change policy and practice are widely recognised [2-4]. There can also be resistance from industry, users of research and other stakeholders.

KT-EQUAL uses the term ‘knowledge exchange’ to reflect the iterative and cyclical process of identifying knowledge needs, undertaking a range of activities to engage with key stakeholders, and promoting findings in forms appropriate to specific audiences.

Recent discussions in the literature have emphasised shifting away from a linear, technicist approach towards understanding knowledge exchange ‘as a dynamic and fluid process which incorporates distinct forms of knowledge from multiple sources’ [3].

We highlight practical examples of engagement and collaboration in the KT-EQUAL programme and how these can be used positively to facilitate assistive technology development, to affect policy and practice and to generate new ideas and imagine future possibilities.

Whilst there are some dilemmas in the wider policy direction of research impact, the dynamic model adopted by the KT-EQUAL programme and the case examples which follow provide a refreshing and innovative way to engage and stimulate research and technologies which aim to meet the needs of an ageing population. The lessons learned are continuing to inform future activities in research impact and knowledge exchange.

## **2. Methods used for knowledge exchange**

This paper draws upon the range of activities undertaken by the KT-EQUAL programme to facilitate knowledge exchange and to actively engage with and influence interested stakeholders.

The key aspects drawn together have emerged from the following:

|                   |                    |
|-------------------|--------------------|
| Active Membership | Over 2400+ members |
|-------------------|--------------------|

|   |  |
|---|--|
| Network   | <p>Free to join<br/>Open to all</p> <p>Wide range of members nationally and internationally included: older people and their carers, industry, policy makers, voluntary and community sector, health and social care professionals, designers, architects, students and academics.</p> <p>Regular updates about activities, on-going dialogue and exchange of information across the membership.</p> |
| National high profile workshop and conference programme                                   | <p>Over 41 workshops convened<br/>Over 2100 participants involved<br/>Free to attend</p> <p>Usually run in partnership with other organisations.<br/>Feedback forms used to gather ideas, suggestions and improvements.</p>  |
| National KT-EQUAL Advisory Group  | Steered the direction of the programme and consisted of key stakeholders from industry, health and social care, funders, leading academics and professional bodies.  |
| The KT-EQUAL Consortium - an interdisciplinary collaboration across seven UK universities | Identified need to bring together experts in subject disciplines: engineering, construction, architecture, participatory and inclusive design, rehabilitation, psychology, change management - alongside expertise in working with the media, EPSRC media fellow, press and communication managers, parliamentary lobbyists and research co-ordinators.  |
| Production of materials in innovative and accessible formats                              | Alongside academic research publications, KT-EQUAL published a range of lay summaries from workshops, produced video and audio content, press releases, website and blog content. Included a series of audio interviews to share practice and case study examples about design and technologies for an ageing population.  |
| Use of media outlets and social media   | <p>On-going engagement with mainstream media outlets - newspapers, television and radio.</p> <p>Active website and blog content maintained through the life of the programme.</p> <p>KT-EQUAL Twitter account had over 750 followers.</p>  |
| Engaging with and influencing key stakeholders  | Systematic and on-going dialogue with key decision makers formed a crucial part of activities, for example, with policy makers, practitioners and industry.  |

### 3. Results

KT-EQUAL set out to show how ageing and disability research can make a difference to people's lives. Three examples of how KT-EQUAL facilitated engagement and collaboration to benefit the lives of older and disabled people are presented [9].

The examples are as follows:

#### 3.1. *Creating a shared community on technologies for health*

A series of workshops were held on assistive technologies and technologies for health. These included: 'Robotics for Health', 'Showcasing research to promote active ageing: from Rehabilitation robots to Assistive technologies and beyond', and 'Issues and Perspectives on Digital Technologies and Care'. The workshops helped to advance the debate about the value and acceptability of healthcare technologies and collaborative approaches to development.

The connections and relationships established through this networking led to a number of outcomes. For example, a collaboration involving three of the participants who attended the 'Robotics for Health' event led to a successful submission for an European Union proposal for robotics for stroke rehabilitation. The research project is called SCRIPT (Supervised Care and Rehabilitation Involving Personal Tele-robotics) and the three year programme recently completed in 2014 (<http://scriptproject.eu>).

The approach used by the KT-EQUAL programme continues to inform and shape new developments. For example, the recently established Centre for Assistive Technology and Connected Healthcare at The University of Sheffield uses a workshop model, a membership network and an updated online presence to facilitate new user-friendly technologies to enable people to live independently (<http://www.catch.org.uk>).

It has also sown other seeds such as the use of PARO seal, a robot companion which has been piloted in a dementia care setting and evaluated in a joint project involving Sheffield Health and Social Care NHS Foundation Trust and the University of Sheffield (<http://shsc.nhs.uk/news/introducing-paro-seal-a-robot-resource-for-people-with-dementia/>).

We also instigated innovative activities to encourage researchers to 'think differently.' Examples include a 'design competition' held at Sheffield Hallam University, UK and the ifOnly app to inspire designers to generate solutions to everyday usability problems (<http://www.ifonlyitworked.com>).

#### 3.2. *Creating a model for engagement and collaboration*

The KT-EQUAL model for engagement and collaboration integrated the following elements:

| <b>Membership network</b>                      | <b>Bringing people together</b>                           | <b>Using online media</b>  | <b>Resources</b>                                   | <b>Staying in touch</b>                           |
|--|---|--|--|---|
| A free to join membership network, open to all | Hosted local and national workshop events, free to attend | Harnessing the power of technology through a dedicated online presence | Freely available resources and outputs from events | Regular email updates with members of the network |

This approach facilitated a range of innovative developments. We discuss some of the key aspects of the model and highlight some of the specialist skills which are needed to manage a diverse range of perspectives.

### *3.2.1. Building and engaging with a dedicated free membership network*

The KT-EQUAL membership network of 2,400+ members included: industry, researchers, policy makers, healthcare providers, practitioners, designers, older people and their carers, voluntary and community sector providers. It continued to encourage new memberships both in the UK and internationally.

The membership network engaged regularly in two-way communication. Collectively it began to build a repository of expertise, sharing knowledge, gathering intelligence, information and ideas.

The regular email updates about latest news and activities and the series of workshop events contributed significantly to nurturing and sustaining the network. This emphasised the value of face-to-face interactions alongside the need for regular contact to sustain engagement.

Responding to the needs of a growing network required dedicated staffing, for example to answer queries, to collate and share information in a timely way.

### *3.2.2. Engaging with and organising high profile workshops*

A series of national and local workshops formed a key component of the KT-EQUAL programme. These were all free to attend and brought together diverse stakeholders in focused, highly productive conversations which would not otherwise have been possible. Through the life of the programme over 2,100 participants came together at KT-EQUAL workshop events.

The events have covered a wide range of areas, including robotics, assistive technologies, sustaining digital engagement for older people, sight loss, continence matters, design for living in later life, extra care housing and innovative supported living solutions for older people, dementia, stroke care, pain and ageing. Many of the workshops were hosted in partnership with other networks and organisations, for example, the New Dynamics of Ageing Programme, the Thomas Pocklington Trust (for people with sensory impairment), Age UK, and professional bodies such as the College of Occupational Therapists, UK.

Feedback forms used at the workshops consistently highlighted the value of making connections at events and being able to come together to discuss perspectives with a varied group of participants. Feedback also invited suggestions for future research and these continued to inform the on-going development of activities. Suggestions for future research and ideas for workshop events was summarised and fed into the planning of the consortium's activities.

A key strength of these workshops was the bringing together of participants from a variety of backgrounds. This led to lively and energetic debate on many occasions and provided a platform where ideas could be contested in an atmosphere of open dialogue and discussion. Bringing a diverse mix of people together also brings elements of unpredictability and could potentially lead to unintended consequences if handled badly, for example, managing differing expectations of research and different perspectives of people involved. This necessitated building skills and expertise in

working with diverse interest groups and managing constructively different views and opinions as part of workshop events and debates.

### *3.3. Influencing parliamentarians - 'Left to our own devices?'*

In 2011, KT-EQUAL launched its flagship awareness-building programme in the form of a national photography competition, exhibition and parliamentary campaign.

Entitled 'Left to our own devices?' the initial competition was run in conjunction with Age UK. It set out to challenge preconceptions about how older people interact with technology, both now and in the future. The winning images from the competition completed a parliamentary tour covering Westminster, Holyrood, Stormont and the Welsh Assembly. In March 2013, we were successful in taking the exhibition to the European Parliament and the European Commission.

The photography competition provided an opportunity to stimulate debate with Members of Parliament and senior policymakers to inform discussions about technologies and older people's lives. The photography competition provided a unique and imaginative approach to engagement with policymakers.

The myriad activities involved in hosting parliamentary exhibitions and talks required dedicated staffing and also the skills of specialist staff - for example, press and communications managers, an advocacy and engagement role with parliamentary offices as well as academic summaries of research and their relevance to policymakers.

## **4. Conclusion**

The dynamic model adopted by the KT-EQUAL programme and the case examples provide a refreshing and innovative way to engage and stimulate research and technologies which aim to meet the needs of an ageing population.

The collaborative model adopted by the KT-EQUAL programme demonstrated how bringing together an interdisciplinary group of researchers, practitioners, industry and older people can facilitate ways in which research can be used to benefit the lives of older people. Some of the key components involved being able to bring people together face to face in workshop events to stimulate sharing of different perspectives, hosting free to attend workshop events and a free to join, open to all membership network.

As the programme of activities evolved through the KT-EQUAL programme, the need for dedicated staffing, specialist skills and expertise to deliver the range of innovative activities was highlighted. There is a need for ongoing and continued engagement with key stakeholders. This continues to be a challenge as specific programmes are dependent on funding to enable activities to continue long-term.

Partnerships and lessons learnt about engagement and participatory approaches continue to inform future developments.

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